

wherein said cAMP binding domain is comprised by the polypeptide having the amino acid sequence as shown in SEQ ID NO:2; and/or

A) ~~Cond~~ c) is competing with a polypeptide comprising or essentially consisting of the amino acid sequence as shown in SEQ ID NO:2 for binding to at least one predetermined binding partner, including cAMP and/or the catalytic subunit for protein kinase A.

18 (Amended). Polynucleotide according to claim 1 and comprising a nucleotide sequence which encodes a polypeptide encoded by nucleotides 542 to 1930 of SEQ ID NO:1.

25 (Amended). Polynucleotide according to claim 1, wherein the complementary strand of said polynucleotide hybridizes under stringent conditions with the polynucleotide defined by nucleotides 534 to 2471 of SEQ ID NO:1 and encodes a polypeptide that

A2 a) has Mucor circinelloides catalytic subunit of protein kinase A activity and is a regulator of morphology of a dimorphic fungal cell; and/or

b) is recognized by an antibody, or a binding fragment thereof, which is capable of recognizing a protein kinase A binding domain of Mucor circinelloides PKAC, wherein said domain is comprised by the polypeptide having the amino acid sequence as shown in SEQ ID NO:12; and/or

c) is competing with a polypeptide comprising or essentially consisting of the amino acid sequence as shown in SEQ ID NO:12 for binding to at least one predetermined binding partner, including PKAR.

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26 (Amended). Polynucleotide according to claim 1 and comprising a nucleotide sequence which encodes a polypeptide encoded by the nucleotide sequence defined by nucleotides 534 to 2471 of SEQ ID NO:11.

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73 (Amended) Polynucleotide according claim 71, wherein the first morphological condition of the fungal cell characterized by a unicellular, essentially spherical morphology is further characterized by an essentially isodiametrical or spherical shape of the fungal cell.

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74 (Amended). Polynucleotide according to claim 71, wherein the second morphological condition of the dimorphic fungal cell, wherein the fungal cell comprises a mycelium and is characterized by filamentous growth, is further characterized by an essentially elongated, hyphal cell shape resulting from a polarized growth of a fungal cell characterized by the first morphological condition.

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80 (Amended). A extrachromosomal, recombinant DNA molecule, preferably in the form of an expression vector, comprising the polynucleotide according to claim 1.

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82 (Amended). A fungal host cell transfected or transformed with the polynucleotide according to claim 1, or a vector comprising said polynucleotide.

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84 (Amended). Fungal cell according to claim 82, wherein said fungal cell further comprises

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i) at least one nucleotide sequence encoding a gene product, and operably linked thereto, and

ii) at least one further nucleotide sequence comprising a further expression signal capable of directing the expression in a fungal cell of the at least one nucleotide sequence encoding the gene product, wherein said further expression signal is regulatable, during growth of the [dimorphic] fungal cell, by one or more of

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a) the composition of the growth medium, including at least one of carbon source, nitrogen source including amino acids or precursors thereof, oxygen content, ionic strength, including NaCl content, pH, low molecular weight compounds, cAMP, and the presence or absence of a cell constituent, or a precursor thereof,

b) the temperature of the growth medium, including any change thereof, including an upshift eliciting the expression of one or more heat shock genes,

c) the growth phase of the fungal cell, and

d) the growth rate of the fungal cell.

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86 (Amended). Dimorphic fungal cell according to claim 85 transfected or transformed with a polynucleotide comprising

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i) a first nucleotide sequence according to at least one regulator of morphology capable of regulating the morphology of a dimorphic fungal cell, and operably linked thereto

ii) a second nucleotide sequence comprising an expression signal capable of directing the expression of the first nucleotide sequence in a dimorphic fungal cell,

wherein the first and second nucleotide sequences are not natively associated.

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118 (Amended) Method for constructing a recombinant fungal cell according to claim 82, said method comprising the step of transforming or transfecting a polynucleotide into a fungal cell, or a dimorphic fungal cell which polynucleotide comprises

AS i) a first nucleotide sequence according to at least one regulator of morphology capable of regulating the morphology of a dimorphic fungal cell, and operably linked thereto

ii) a second nucleotide sequence comprising an expression signal capable of directing the expression of the first nucleotide sequence in a dimorphic fungal cell,

wherein the first and second nucleotide sequences are not natively associated.

120 (Amended). Method for regulating the morphology of a recombinant fungal cell according to claim 82, said method comprising the steps of

i) cultivating said fungal cell [or said dimorphic fungal cell] under conditions allowing expression of said first nucleotide sequence encoding the at least one regulator of morphology, and

ii) regulating the morphology of said recombinant fungal cell.

AS 121 (Amended). Method for obtaining a predetermined dimorphic shift of a dimorphic fungal cell according to claim 83, said method comprising the steps of

i) cultivating said dimorphic fungal cell under conditions allowing expression of said first nucleotide sequence encoding the at least one regulator of morphology, and

ii) obtaining a predetermined dimorphic shift of said dimorphic fungal cell, wherein said dimorphic shift results from regulating the expression in said dimorphic cell of said regulator of morphology.

122 (Amended) Method for increasing the filamentation of a dimorphic fungal cell according to claim 83, said method comprising the steps of

i) cultivating said dimorphic fungal cell under conditions allowing expression of said first nucleotide sequence encoding the at least one regulator of morphology, and

ii) increasing the filamentation of said dimorphic fungal cell, wherein said increased filamentation results from regulating the expression in said dimorphic cell of said regulator of morphology.

123 (Amended). Method for increasing the secretory capacity of a dimorphic fungal cell according to claim 83, said method comprising the steps of

i) cultivating said dimorphic fungal cell under conditions allowing expression of said first nucleotide sequence encoding the at least one regulator of morphology, and

ii) increasing the secretory capacity of said dimorphic fungal cell, wherein said increased secretory capacity results from regulating the expression in said dimorphic cell of said regulator of morphology.